

FIG. 1

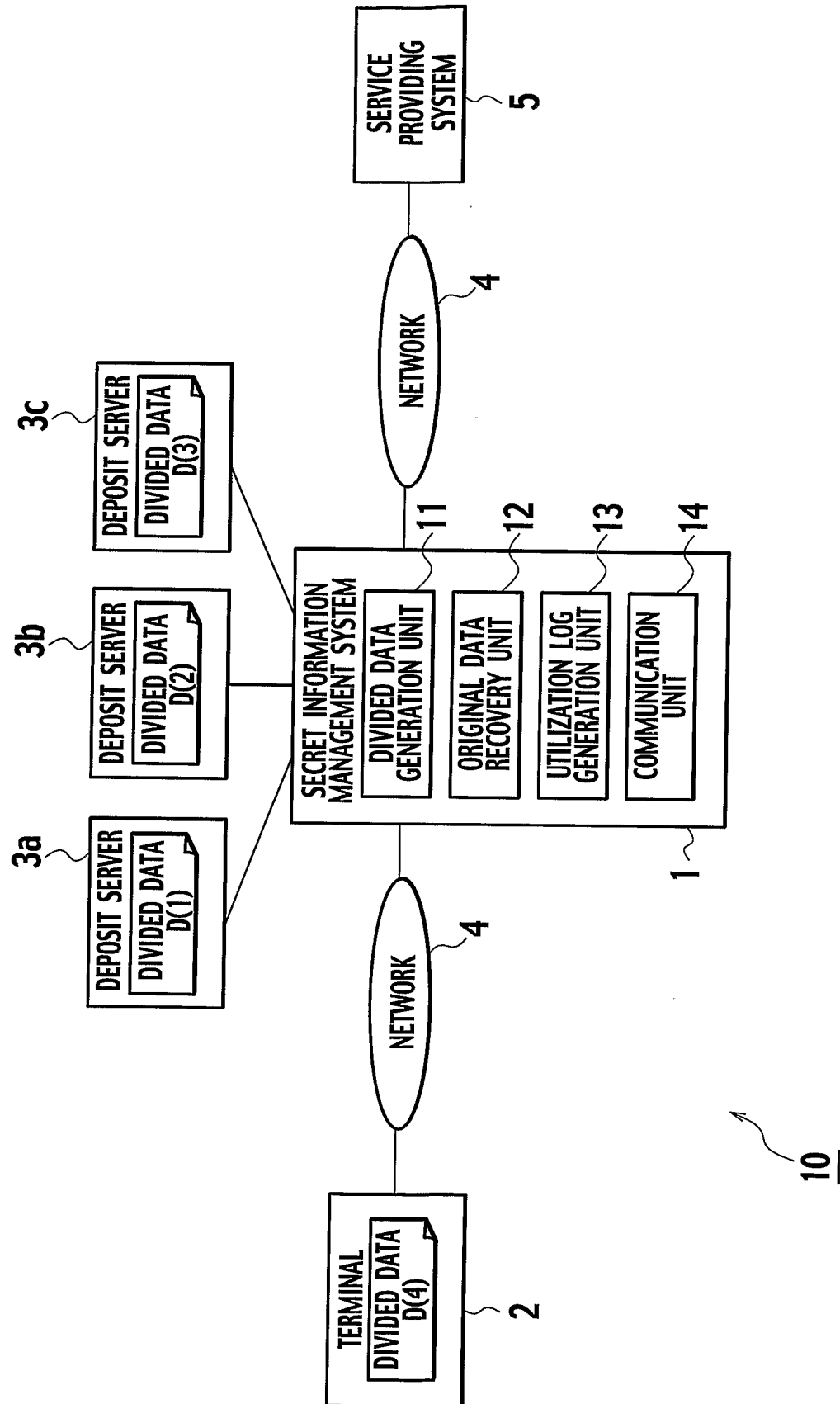


FIG. 2

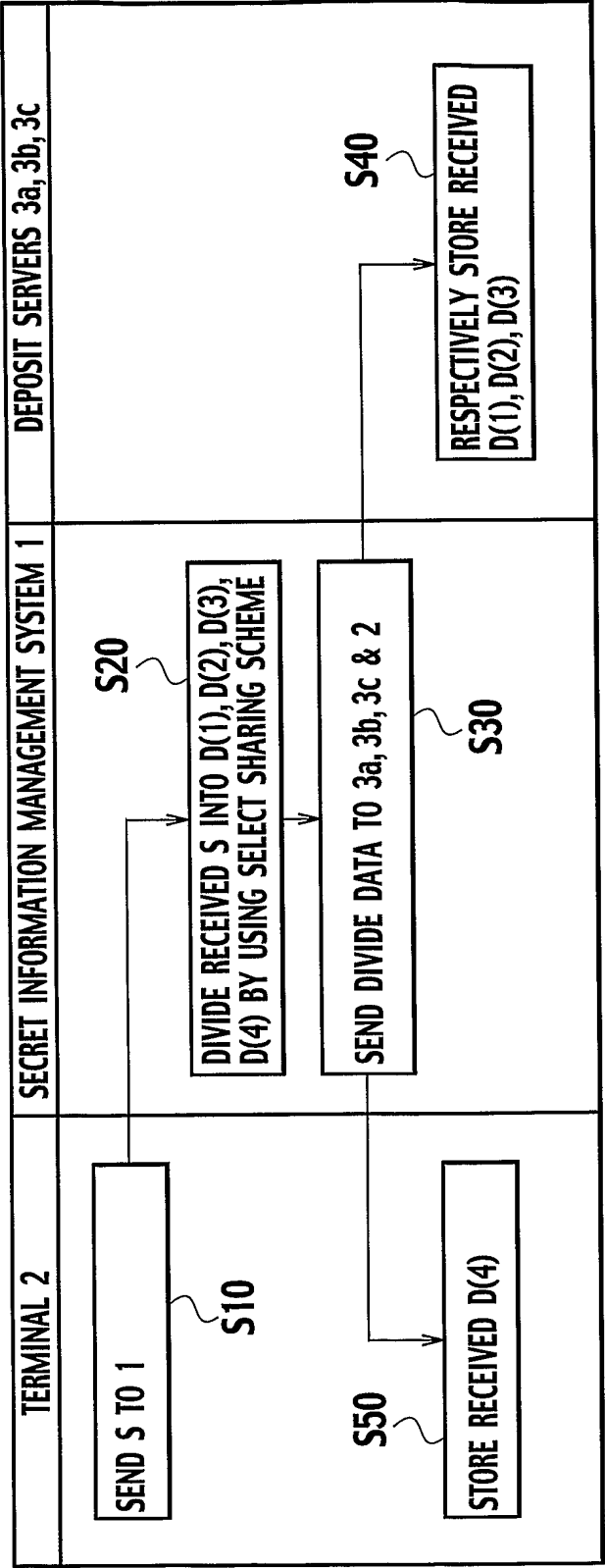


FIG. 3

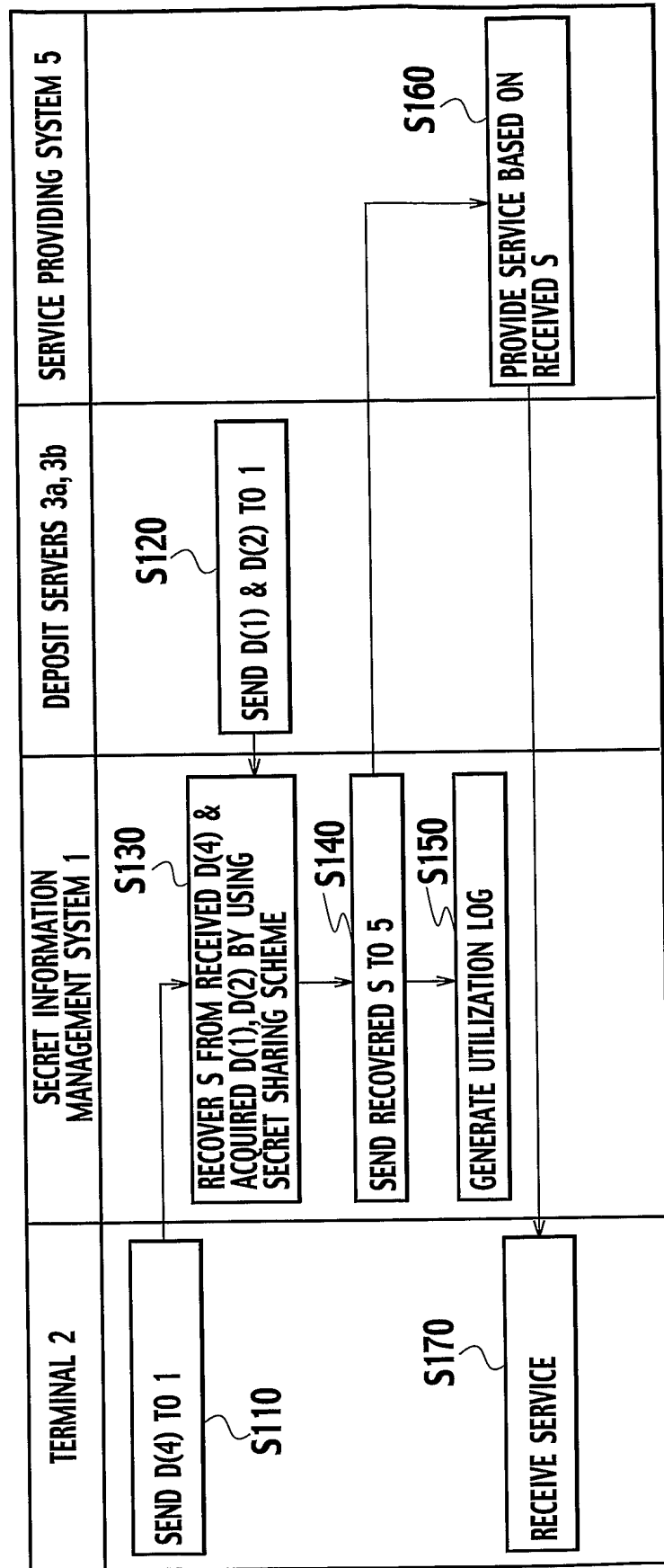


FIG. 4

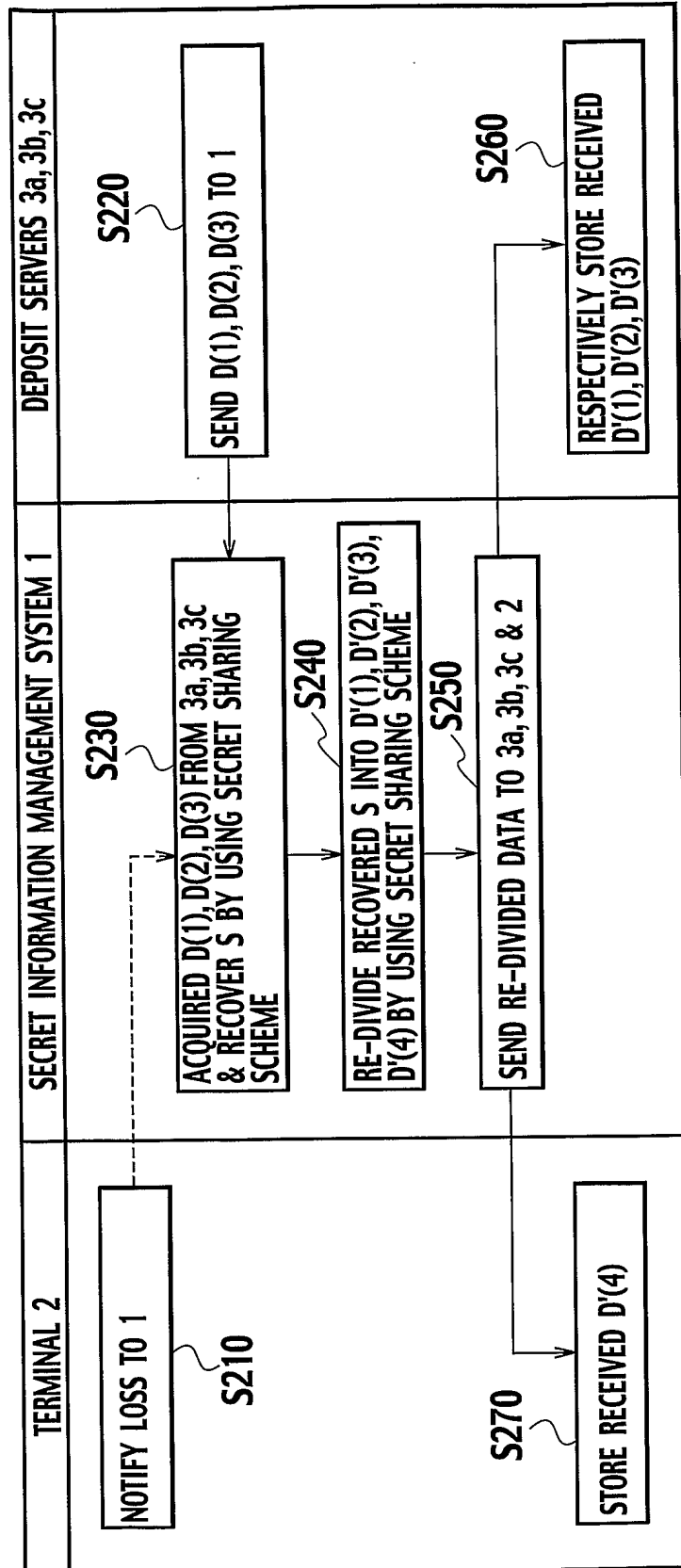


FIG. 5

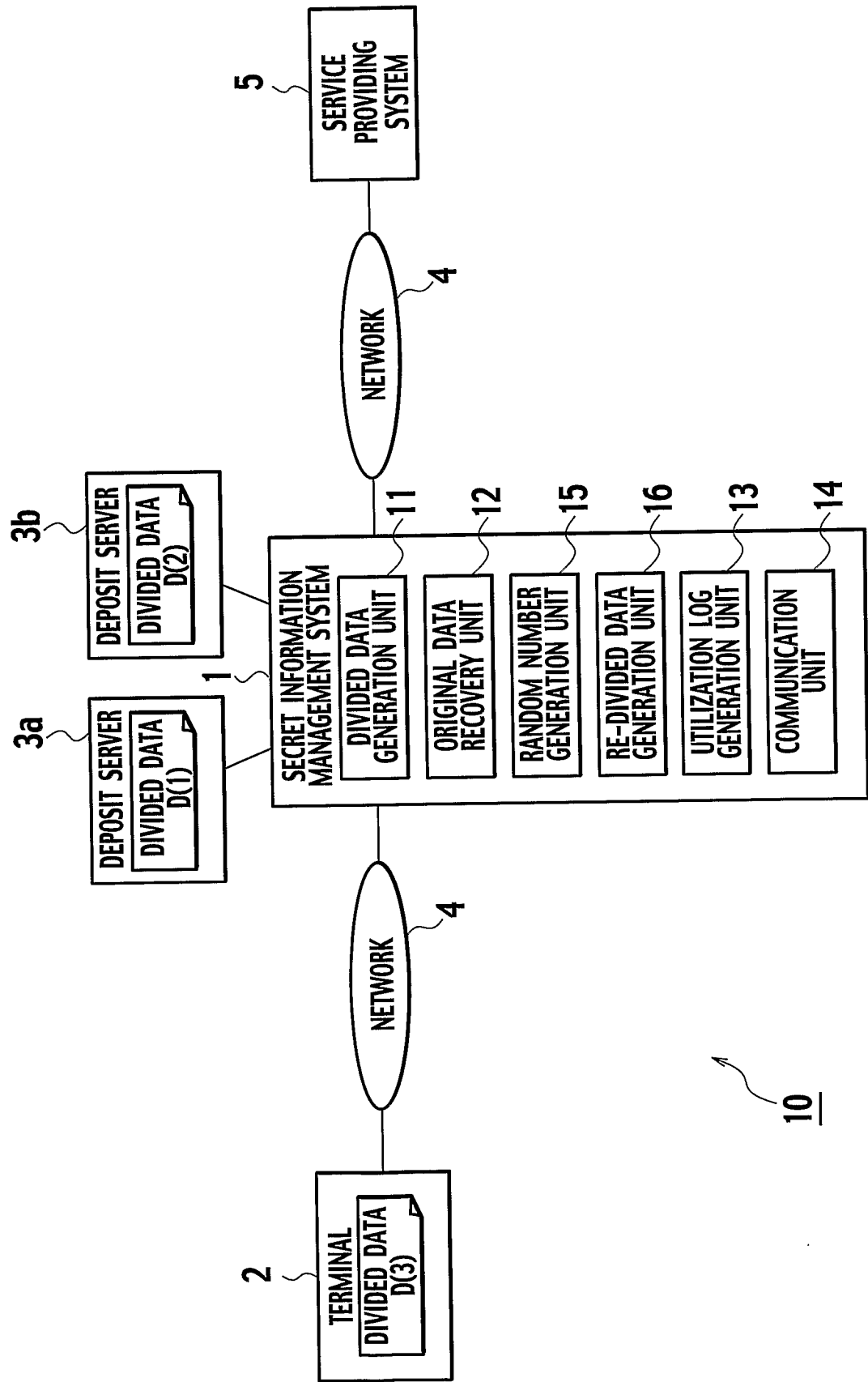


FIG. 6

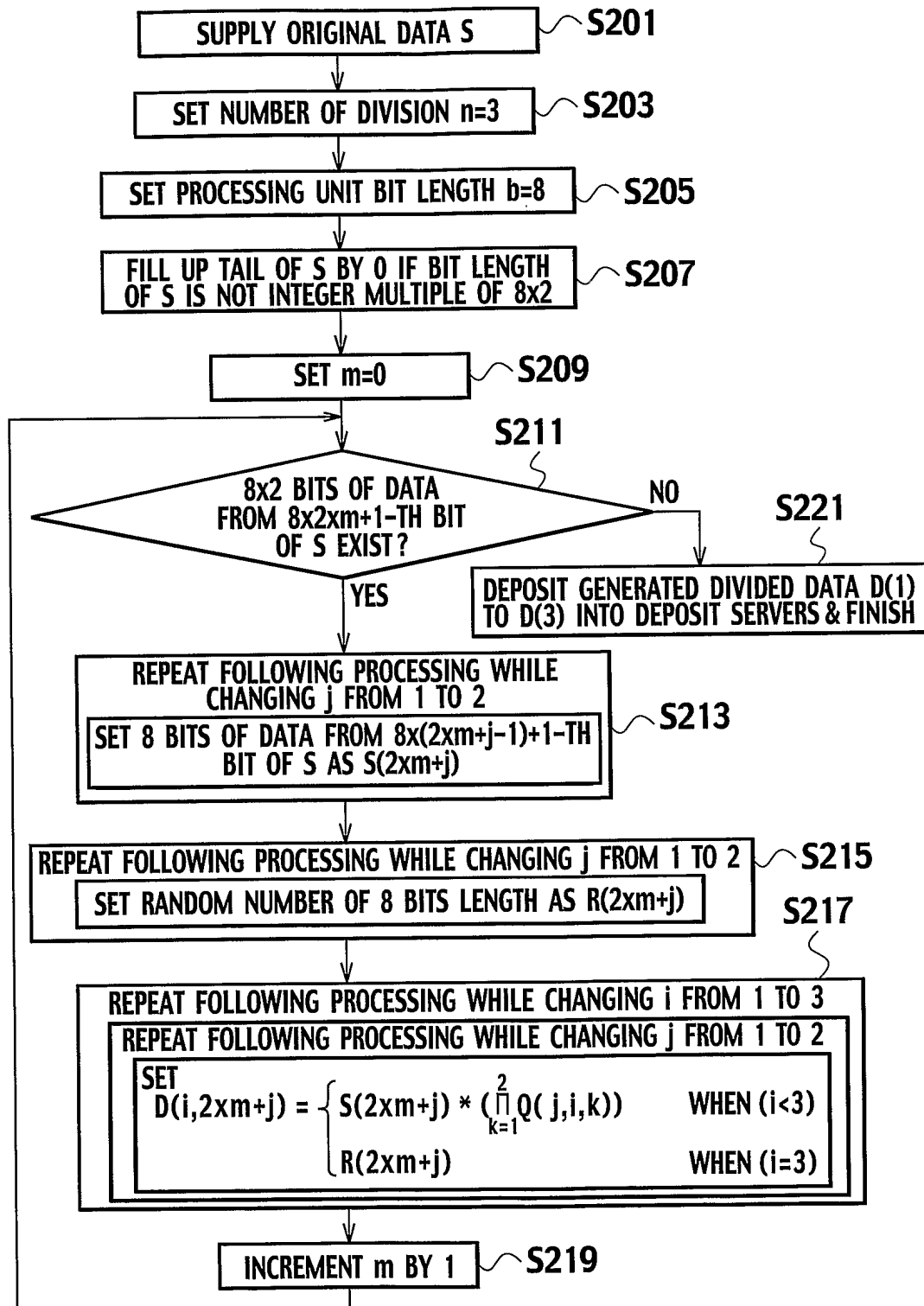


FIG. 7

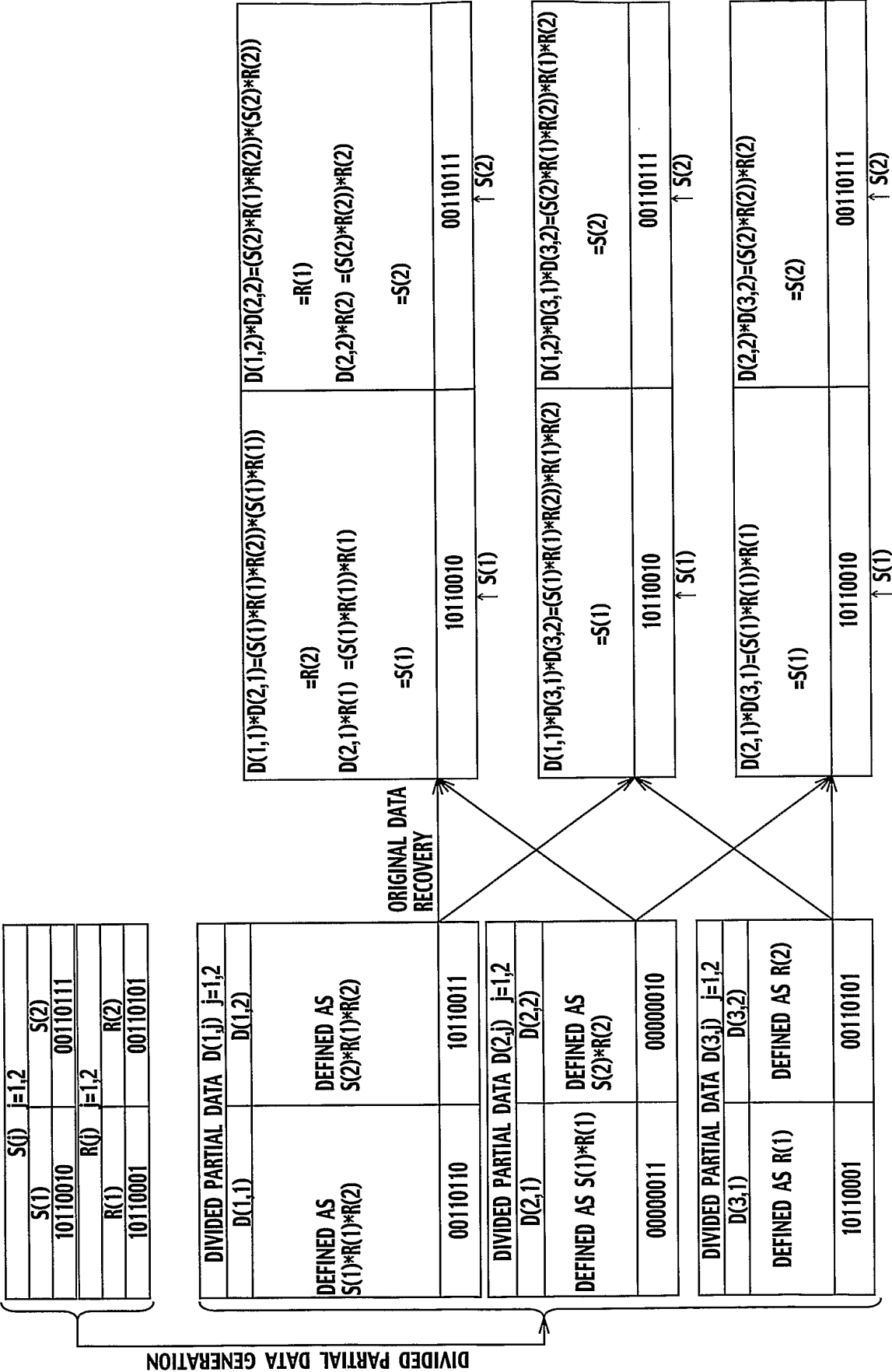


FIG. 8

DIVISION INTO THREE (n=3) ORIGINAL DATA CAN BE RECOVERED FROM ANY TWO DIVIDED DATA (m IS ARBITRARY INTEGER m>0) →CONTINUED TO TAIL OF ORIGINAL DATA S					
VALUE OF j	1	2	...	j=2×m+1	j+1
ORIGINAL DATA S(j)	S(1)	S(2)	...	S(j)	S(j+1)
RANDOM NUMBER R(j)	R(1)	R(2)	...	R(j)	R(j+1)
DIVIDED PARTIAL DATA D(1,j)	S(1)*R(1)*R(2)	S(2)*R(1)*R(2)	...	S(j)*R(j)*R(j+1)	S(j+1)*R(j)*R(j+1)
DIVIDED PARTIAL DATA D(2,j)	S(1)*R(1)	S(2) *R(2)	...	S(j)*R(j)	S(j+1) *R(j+1)
DIVIDED PARTIAL DATA D(3,j)	R(1)	R(2)	...	R(j)	R(j+1)

FIG. 9

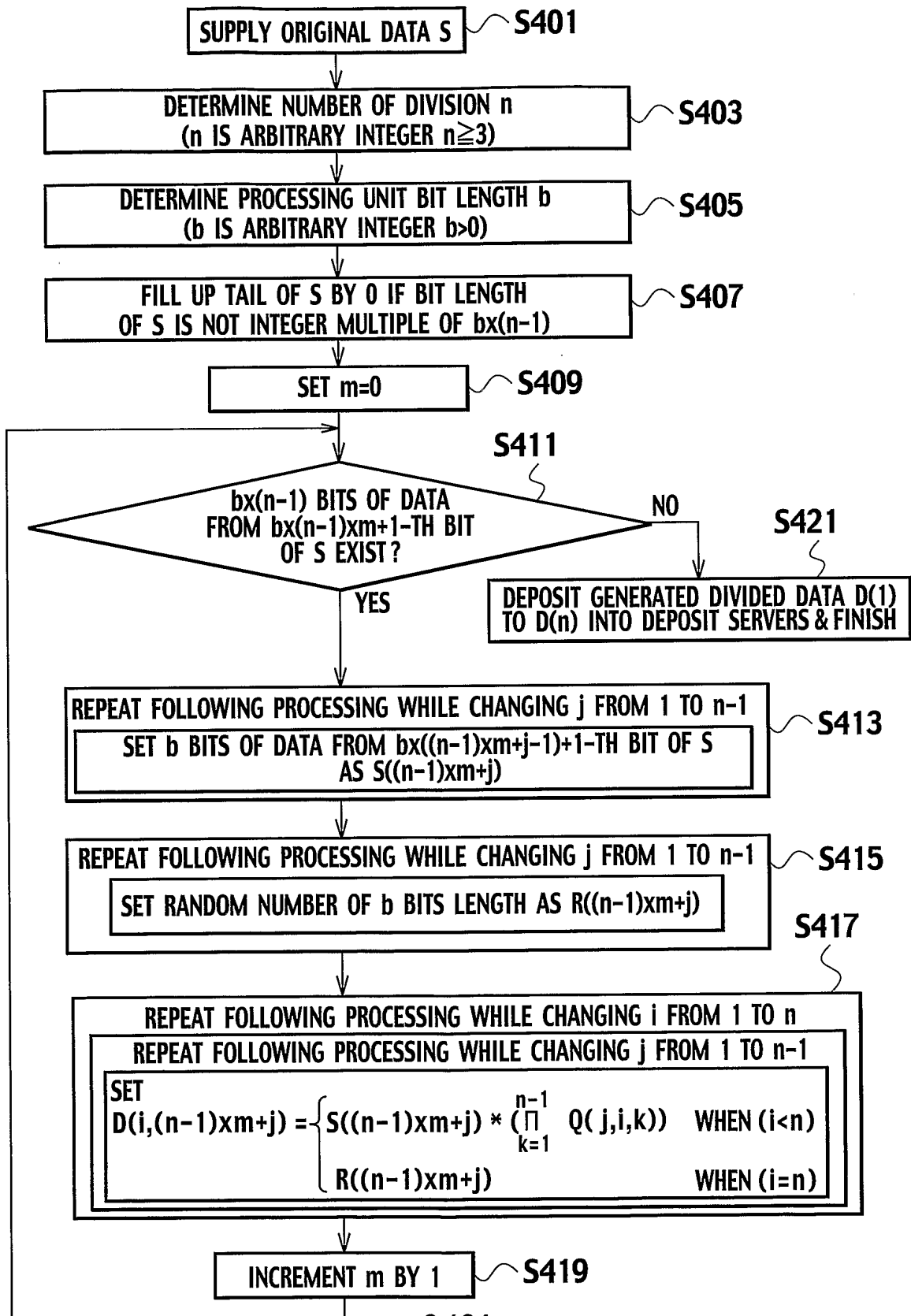


FIG. 10

ORIGINAL

VALUE OF j	1	2	...	j=2m+1	j+1	...
ORIGINAL DATA S(j)	S(1)	S(2)	...	S(j)	S(j+1)	...
RANDOM NUMBER R(j)	R(1)	R(2)	...	R(j)	R(j+1)	...
DIVIDED PARTIAL DATA D(1,j)	S(1)*R(1)*R(2)	S(2)*R(1)*R(2)	...	S(j)*R(j)*R(j+1)	S(j+1)*R(j)*R(j+1)	...
DIVIDED PARTIAL DATA D(2,j)	S(1)*R(1)	S(2) *R(2)	...	S(j)*R(j)	S(j+1) *R(j+1)	...
DIVIDED PARTIAL DATA D(3,j)	R(1)	R(2)	...	R(j)	R(j+1)	...

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ROTATE (1, D(1, 2), D(2, 2))

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ROTATE (1, D(1, j+1), D(2, j+1))

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IMPROVEMENT

VALUE OF j	1	2	...	j=2m+1	j+1	...
ORIGINAL DATA S(j)	S(1)	S(2)	...	S(j)	S(j+1)	...
RANDOM NUMBER R(j)	R(1)	R(2)	...	R(j)	R(j+1)	...
DIVIDED PARTIAL DATA D(1,j)	S(1)*R(1)*R(2)	S(2) *R(2)	...	S(j)*R(j)*R(j+1)	S(j+1) *R(j+1)	...
DIVIDED PARTIAL DATA D(2,j)	S(1)*R(1)	S(2)*R(1)*R(2)	...	S(j)*R(j)	S(j+1)*R(j)*R(j+1)	...
DIVIDED PARTIAL DATA D(3,j)	R(1)	R(2)	...	R(j)	R(j+1)	...

FIG. 11

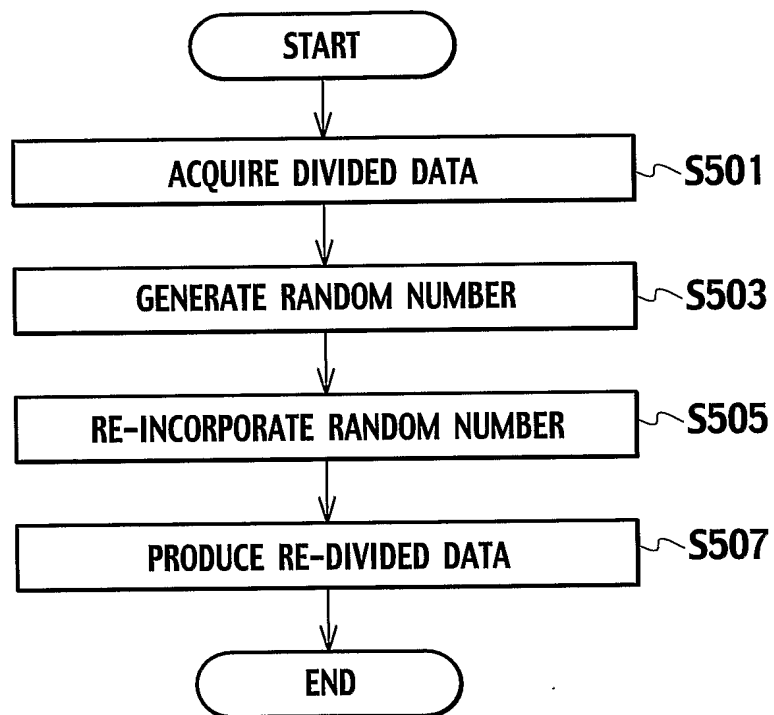


FIG. 12

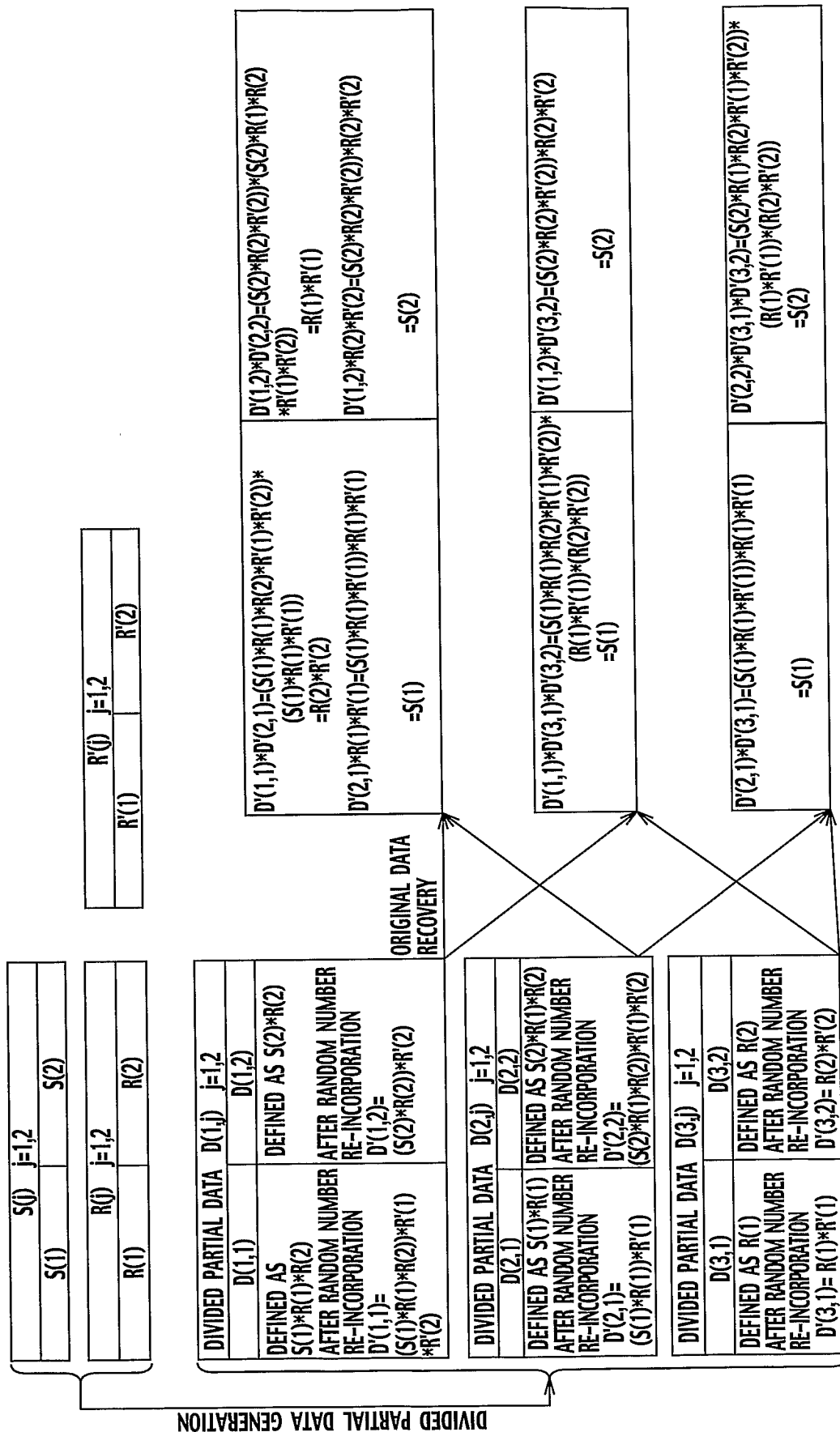


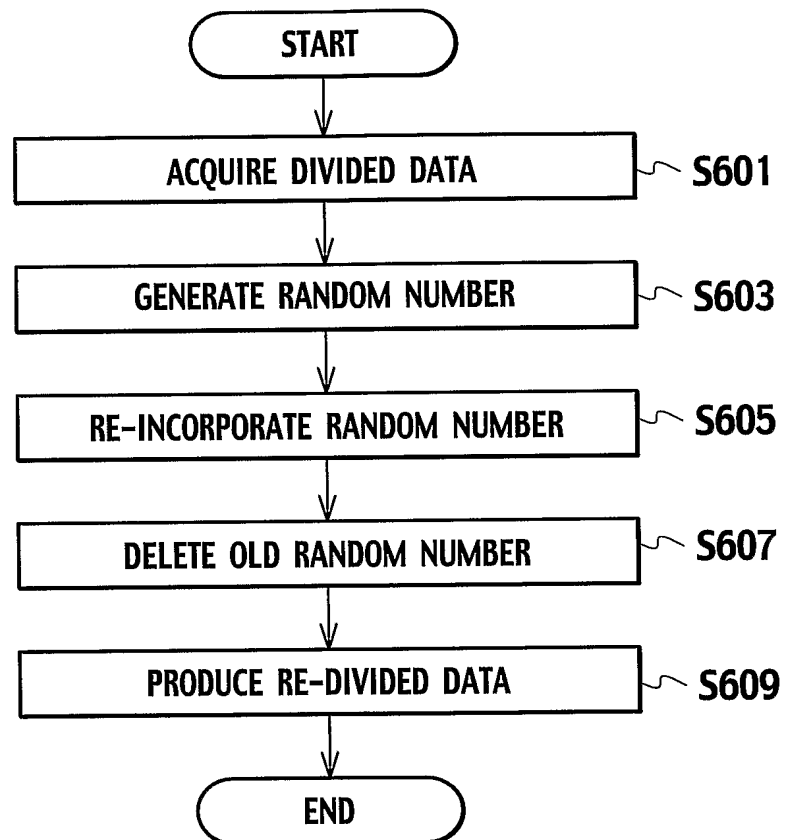
FIG. 13

FIG. 14

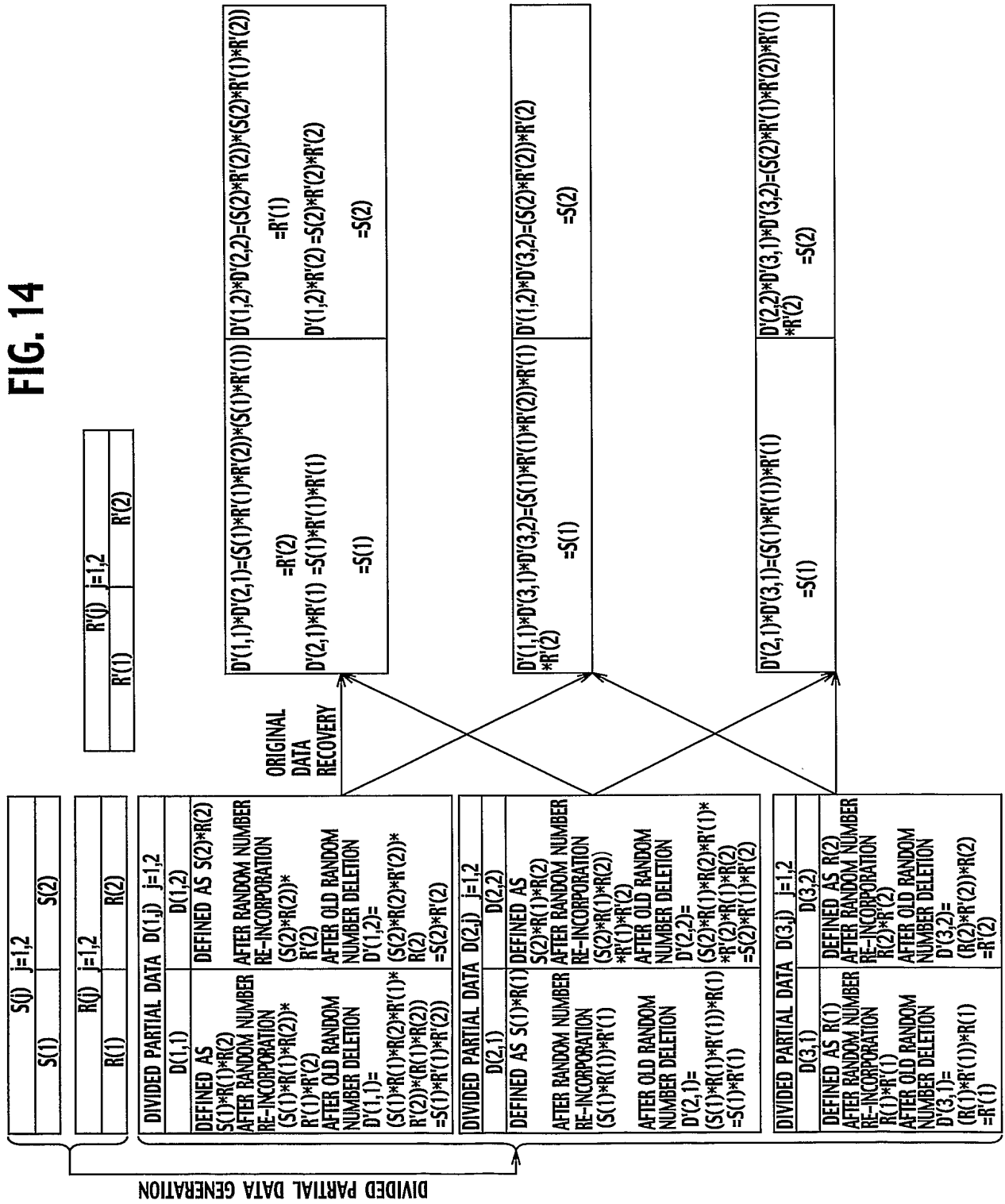


FIG. 15

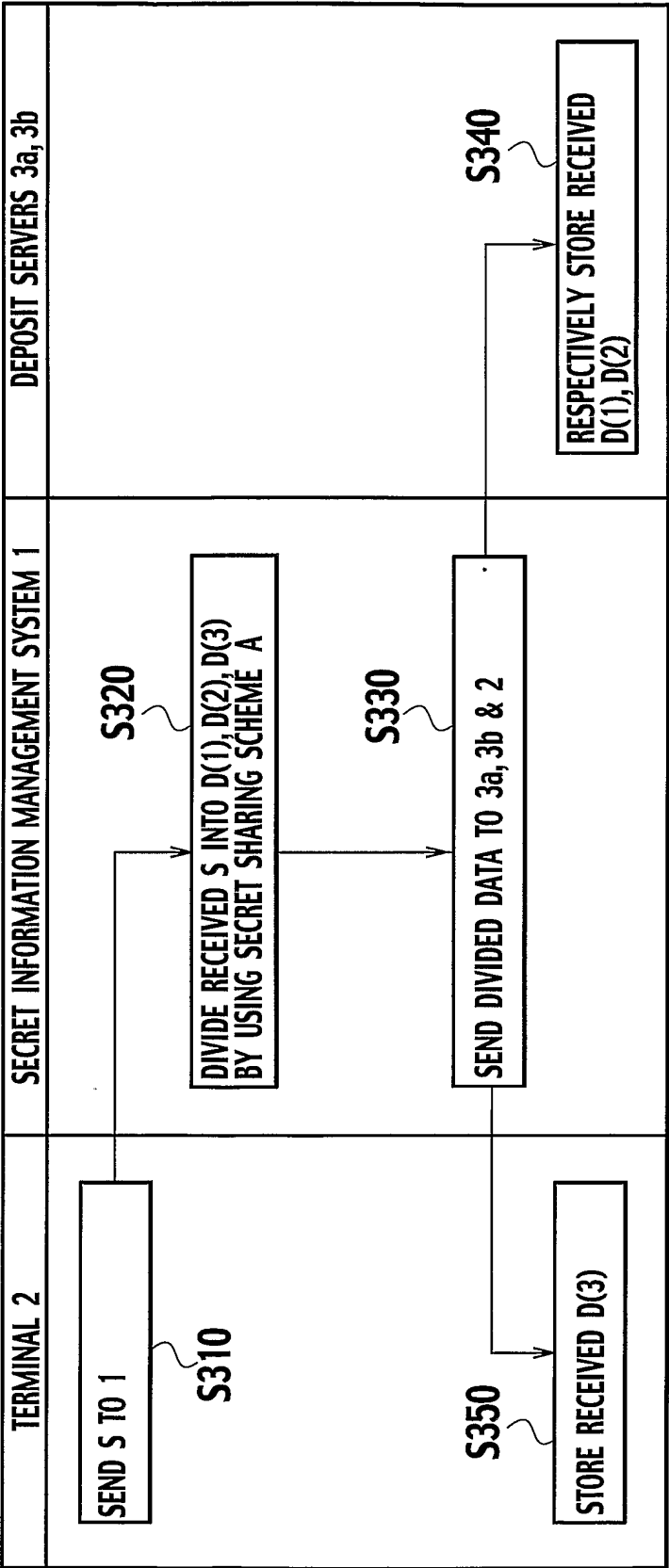


FIG. 16

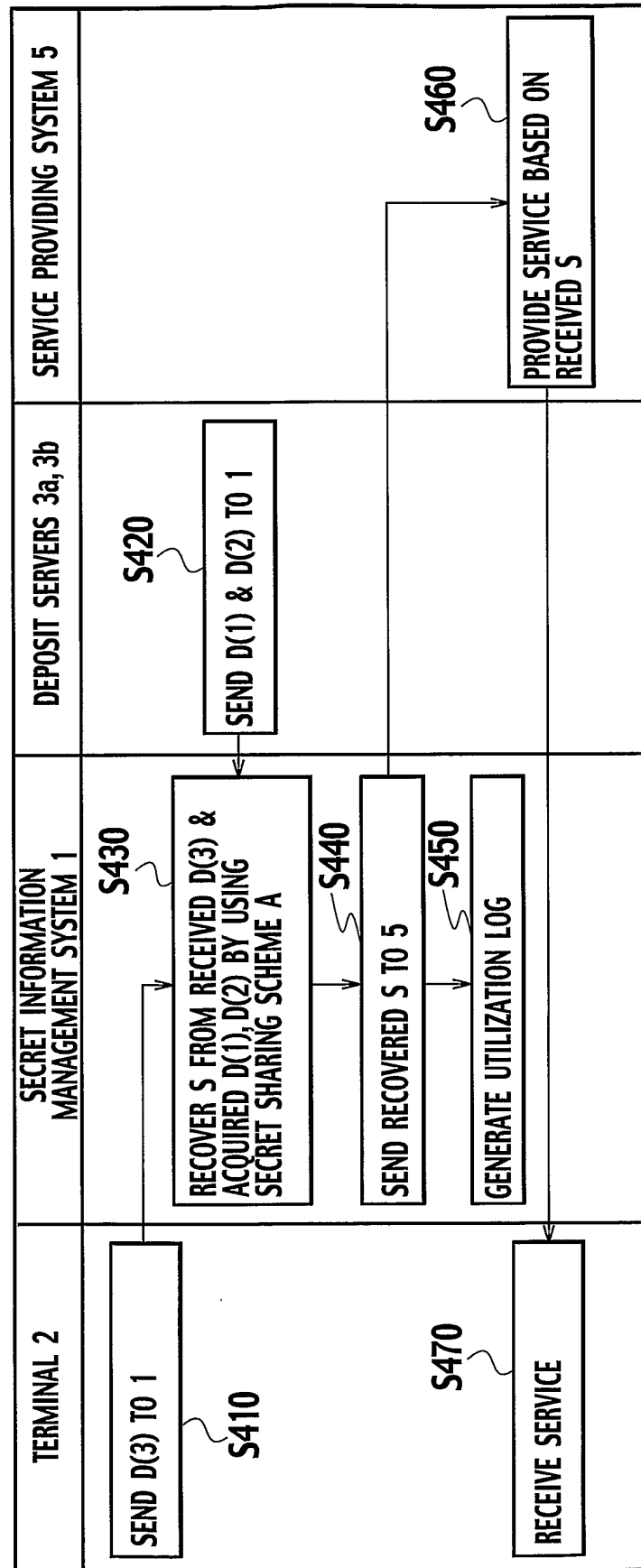
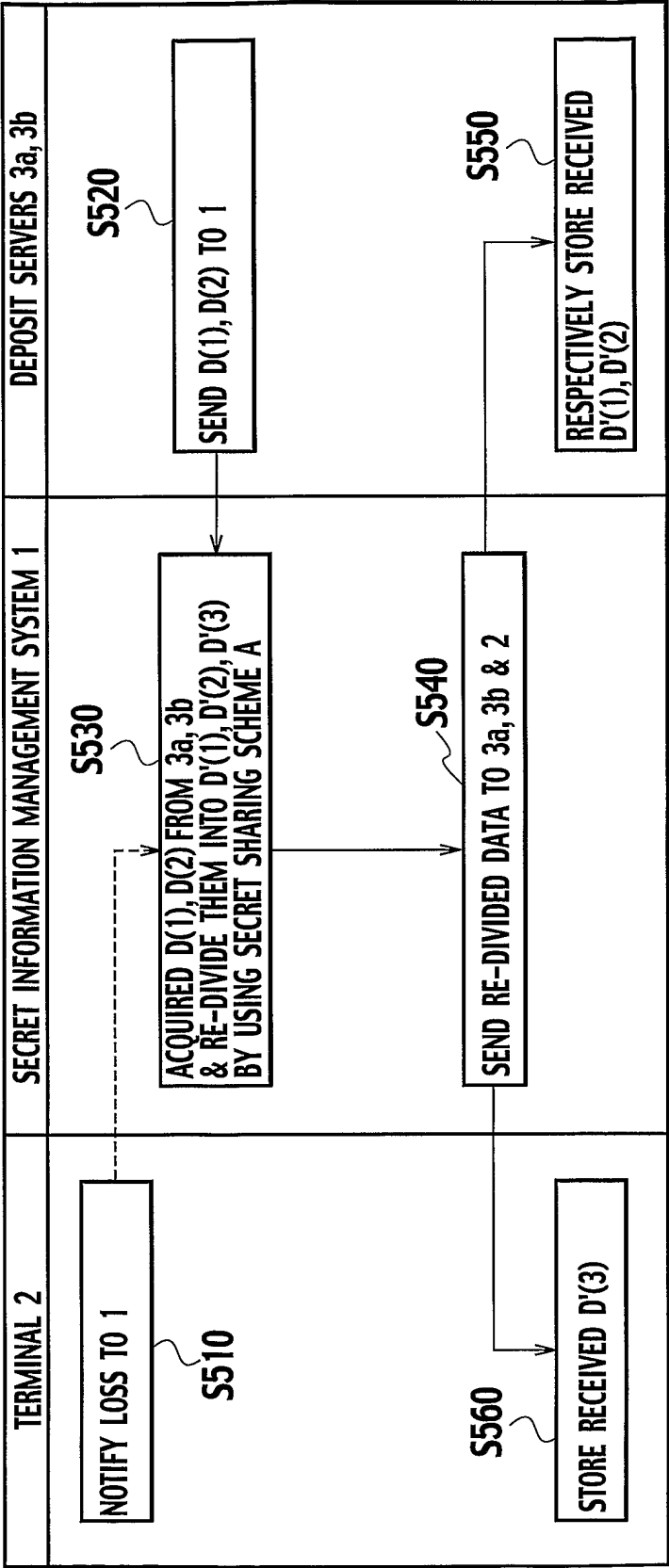


FIG. 17



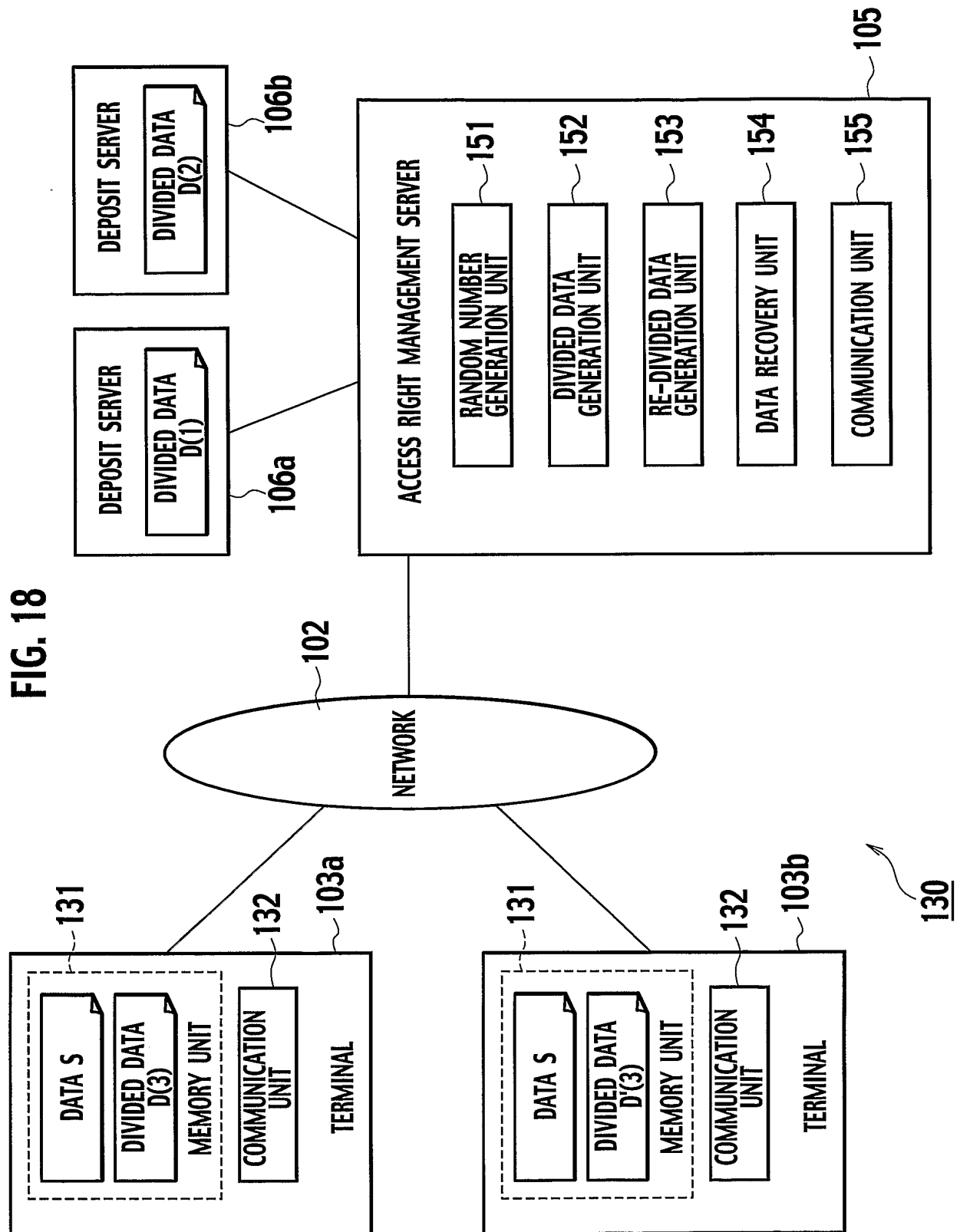


FIG. 20

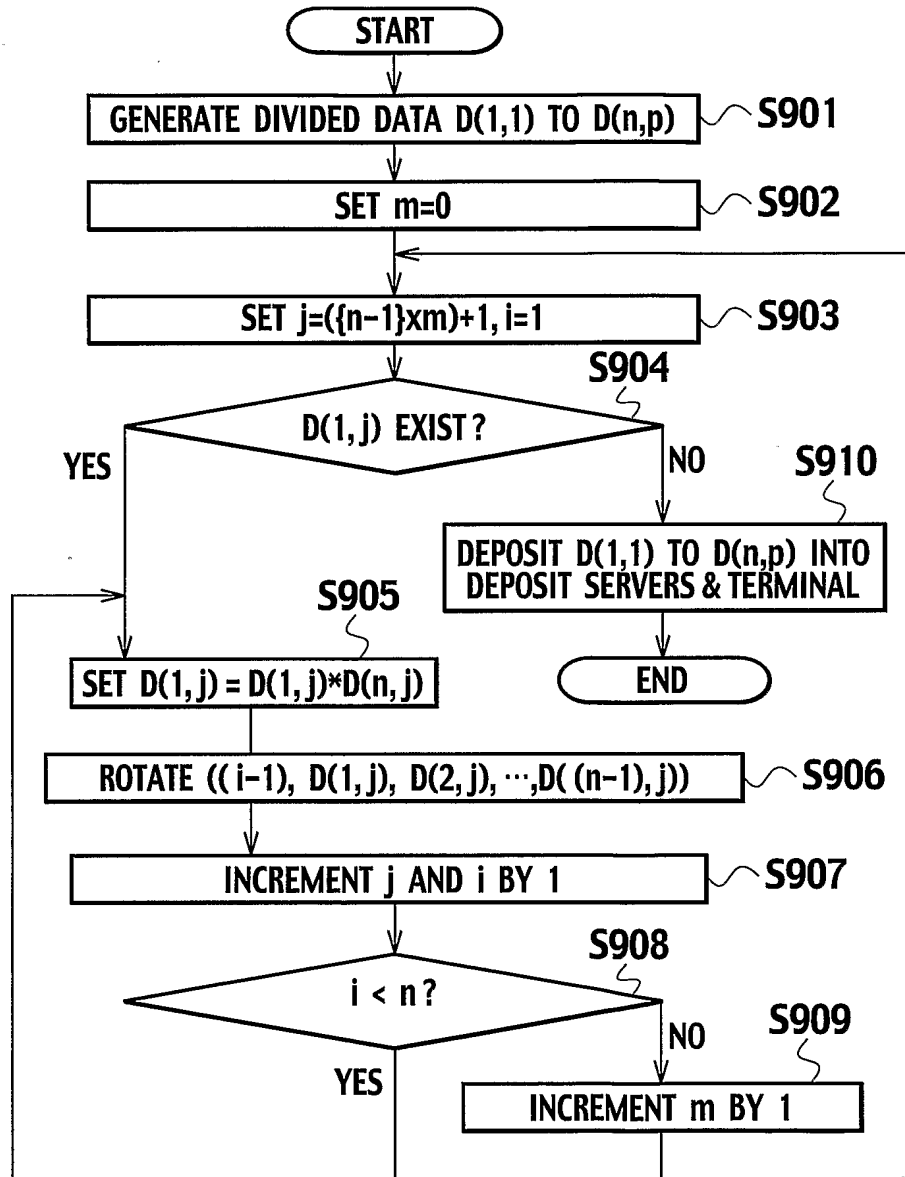


FIG. 21

ORIGINAL

VALUE OF j	1	2	3	...
ORIGINAL DATA S(j)	S(1)	S(2)	S(3)	...
RANDOM NUMBER R(j)	R(1)	R(2)	R(3)	...
DIVIDED PARTIAL DATA D(1,j)	$S(1)*R(1)*R(2)*R(3)$	$S(2)*R(1)*R(2)*R(3)$	$S(3)*R(1)*R(2)*R(3)$	...
DIVIDED PARTIAL DATA D(2,j)	$S(1)*R(1)*R(2)$	$S(2)*R(2)*R(3)$	$S(3)*R(1)*R(3)$	...
DIVIDED PARTIAL DATA D(3,j)	$S(1)*R(1)$	$S(2)*R(2)$	$S(3)*R(3)$...
DIVIDED PARTIAL DATA D(4,j)	R(1)	R(2)	R(3)	

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ROTATE (1, D(1, 2), D(2, 2), D(3, 2))

ROTATE (2, D(1, 3), D(2, 3), D(3, 3))

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IMPROVEMENT

VALUE OF j	1	2	3	...
ORIGINAL DATA S(j)	S(1)	S(2)	S(3)	...
RANDOM NUMBER R(j)	R(1)	R(2)	R(3)	...
DIVIDED PARTIAL DATA D(1,j)	$S(1)*R(1)*R(2)*R(3)$	$S(2)*R(2)$	$S(3)*R(1)*R(3)$	...
DIVIDED PARTIAL DATA D(2,j)	$S(1)*R(1)*R(2)$	$S(2)*R(1)*R(2)*R(3)$	$S(3)*R(3)$	...
DIVIDED PARTIAL DATA D(3,j)	$S(1)*R(1)$	$S(2)*R(2)*R(3)$	$S(3)*R(1)*R(2)*R(3)$	...
DIVIDED PARTIAL DATA D(4,j)	R(1)	R(2)	R(3)	

FIG. 22

ORIGINAL

...	$j=3m+1$	$j+1$	$j+2$	...
...	$S(j)$	$S(j+1)$	$S(j+2)$	...
...	$R(j)$	$R(j+1)$	$R(j+2)$	...
...	$S(j)*R(j)*R(j+1)*R(j+2)$	$S(j+1)*R(j)*R(j+1)*R(j+2)$	$S(j+2)*R(j)*R(j+1)*R(j+2)$...
...	$S(j)*R(j)*R(j+1)$	$S(j+1)*R(j+1)*R(j+2)$	$S(j+2)*R(j)*R(j+2)$...
...	$S(j)*R(j)$	$S(j+1)*R(j+1)$	$S(j+1)*R(j+2)$	
...	$R(j)$	$*R(j+1)$	$*R(j+2)$...

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ROTATE (1, D(1, j+1), D(2, j+1), D(3, j+1))

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ROTATE (2, D(1, j+2), D(2, j+2), D(3, j+2))

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IMPROVEMENT

...	$j=3m+1$	$j+1$	$j+2$...
...	$S(j)$	$S(j+1)$	$S(j+2)$...
...	$R(j)$	$R(j+1)$	$R(j+2)$...
...	$S(j)*R(j)*R(j+1)*R(j+2)$	$S(j+1)*R(j+1)*R(j+2)$	$S(j+2)*R(j)*R(j+2)$...
...	$S(j)*R(j)*R(j+1)$	$S(j+1)*R(j)*R(j+1)*R(j+2)$	$S(j+2)*R(j+1)*R(j+2)$...
...	$S(j)*R(j)$	$S(j+1)*R(j+1)*R(j+2)$	$S(j+2)*R(j)*R(j+1)*R(j+2)$	
...	$R(j)$	$*R(j+1)$	$*R(j+2)$...

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IMPROVEMENT

FIG. 23

ORIGINAL

VALUE OF j	1	2	3	4	...
ORIGINAL DATA S(j)	S(1)	S(2)	S(3)		...
RANDOM NUMBER R(j)	R(1)	R(2)	R(3)		...
DIVIDED PARTIAL DATA D(1,j)	$S(1)*R(1)*R(2)*R(3)*R(4)$	$S(2)*R(1)*R(2)*R(3)*R(4)$	$S(3)*R(1)*R(2)*R(3)*R(4)$	$S(4)*R(1)*R(2)*R(3)*R(4)$	...
DIVIDED PARTIAL DATA D(2,j)	$S(1)*R(1)*R(2)*R(3)$	$S(2)*R(2)*R(3)*R(4)$	$S(3)*R(1)*R(3)*R(4)$	$S(4)*R(1)*R(2)$	...
DIVIDED PARTIAL DATA D(3,j)	$S(1)*R(1)*R(2)$	$S(2)*R(2)*R(3)$	$S(3)*R(3)*R(4)$	$S(4)*R(1)$	...
DIVIDED PARTIAL DATA D(4,j)	$S(1)*R(1)$	$S(2)*R(2)$	$S(3)*R(3)$	$S(4)$	...
DIVIDED PARTIAL DATA D(5,j)	R(1)	$*R(2)$	$*R(3)$	$*R(4)$	...

∇ ∇ ∇ ∇
 ROTATE (1, D(1, 2), D(2, 2), (3, 2), D(4, 2)) ∇ ∇
 ∇ ROTATE (2, D(1, 3), D(2, 3), (3, 3), D(4, 3)) ∇
 ∇ ROTATE (3, D(1, 4), D(2, 4), (3, 4), D(4, 4)) ∇
 ∇

IMPROVEMENT

VALUE OF j	1	2	3	4	...
ORIGINAL DATA S(j)	S(1)	S(2)	S(3)		...
RANDOM NUMBER R(j)	R(1)	R(2)	R(3)		...
DIVIDED PARTIAL DATA D(1,j)	$S(1)*R(1)*R(2)*R(3)*R(4)$	$S(2)*R(2)$	$S(3)*R(3)*R(4)$	$S(4)*R(1)*R(2)$	...
DIVIDED PARTIAL DATA D(2,j)	$S(1)*R(1)*R(2)*R(3)$	$S(2)*R(1)*R(2)*R(3)*R(4)$	$S(3)*R(3)$	$S(4)*R(1)$	...
DIVIDED PARTIAL DATA D(3,j)	$S(1)*R(1)*R(2)$	$S(2)*R(2)*R(3)*R(4)$	$S(3)*R(1)*R(2)*R(3)*R(4)$	$S(4)$	...
DIVIDED PARTIAL DATA D(4,j)	$S(1)*R(1)$	$S(2)*R(2)*R(3)$	$S(3)*R(1)*R(3)*R(4)$	$S(4)*R(1)*R(2)*R(3)*R(4)$	...
DIVIDED PARTIAL DATA D(5,j)	R(1)	$*R(2)$	$*R(3)$	$*R(4)$	...

FIG. 24

ORIGINAL

...	$j=4m+1$	$j+1$	$j+2$	$j+3$	...
...	$S(j)$	$S(j+1)$	$S(j+2)$	$S(j+3)$	...
...	$R(j)$	$R(j+1)$	$R(j+2)$	$R(j+3)$	...
...	$S(j)*R(j)*(j+1)*R(j+2)*R(j+3)$	$S(j+1)*R(j)*R(j+1)*R(j+2)*R(j+3)$	$S(j+2)*R(j)*R(j+1)*R(j+2)*R(j+3)$	$S(j+3)*R(j)*R(j+1)*R(j+2)*R(j+3)$	...
...	$S(j)*R(j)*(j+1)*R(j+2)$	$S(j+1)*R(j+1)*R(j+2)*R(j+3)$	$S(j+2)*R(j)*R(j+2)*R(j+3)$	$S(j+3)*R(j)*R(j+1)*R(j+3)$	...
...	$S(j)*R(j)*(j+1)$	$S(j+1)*R(j+1)*R(j+2)$	$S(j+2)*R(j)$	$S(j+3)*R(j)$	...
...	$S(j)*R(j)$	$S(j+1)*R(j+1)$	$S(j+2)*R(j+2)$	$S(j+3)*R(j+3)$	...
...	$R(j)$	$R(j+1)$	$R(j+2)$	$R(j+3)$	...

∇ ∇ ∇ ∇ ∇
 ROTATE (1, D(1, j+1), D(2, j+1), D(3, j+1), D(4, j+1))
 ∇ ∇ ∇ ∇ ∇
 ROTATE (2, D(1, j+2), D(2, j+2), D(3, j+2), D(4, j+2))
 ∇ ∇ ∇ ∇ ∇
 ROTATE (3, D(1, j+3), D(2, j+3), D(3, j+3), D(4, j+3))

IMPROVEMENT

...	$j=4m+1$	$j+1$	$j+2$	$j+3$	...
...	$S(j)$	$S(j+1)$	$S(j+2)$	$S(j+3)$	...
...	$R(j)$	$R(j+1)$	$R(j+2)$	$R(j+3)$	...
...	$S(j)*R(j)*(j+1)*R(j+2)*R(j+3)$	$S(j+1)*R(j+1)*R(j+2)*R(j+3)$	$S(j+2)*R(j)*R(j+1)*R(j+2)*R(j+3)$	$S(j+3)*R(j)*R(j+1)*R(j+2)*R(j+3)$	...
...	$S(j)*R(j)*(j+1)*R(j+2)$	$S(j+1)*R(j+1)*R(j+2)*R(j+3)$	$S(j+2)*R(j)*R(j+1)*R(j+2)*R(j+3)$	$S(j+3)*R(j)*R(j+1)*R(j+2)*R(j+3)$	...
...	$S(j)*R(j)*(j+1)$	$S(j+1)*R(j+1)*R(j+2)*R(j+3)$	$S(j+2)*R(j)*R(j+1)*R(j+2)*R(j+3)$	$S(j+3)*R(j)*R(j+1)*R(j+2)*R(j+3)$	...
...	$S(j)*R(j)$	$S(j+1)*R(j+1)*R(j+2)$	$S(j+2)*R(j)$	$S(j+3)*R(j+3)$	...
...	$R(j)$	$R(j+1)$	$R(j+2)$	$R(j+3)$	...